

VOLVO CONSTRUCTION EQUIPMENT MATRIS REPORT

Machine model EC340D	SerialNo 210253	Operating Hours 4050.1	Reading Date 1/6/2016
Company name Flagler	Dealer	Report Issuer	
Contact name	Technician shawn rowell	Primary Application Civil engineering/Heavy construction	
Site	Workorder	Ground Condition	

MATRIS Reading, Summary / Recommendation



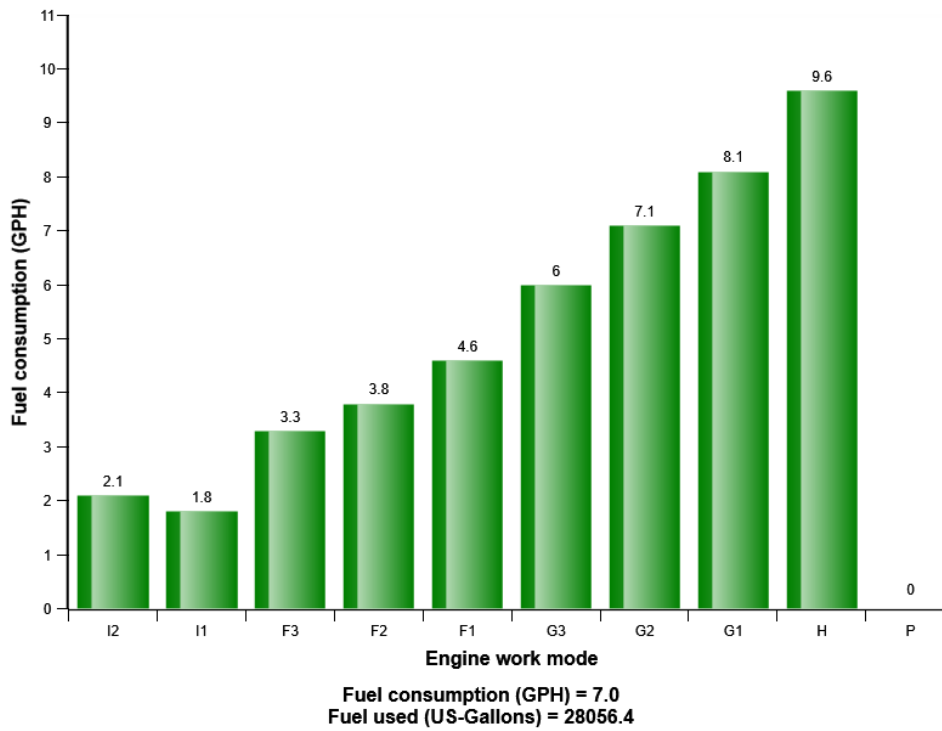
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Main equipment	Type	Equipment
	Track chain	
	X3 piping	
	Main Attachment	
	Attachment Interface	
	Hydraulic Fluid	
	X1 Piping	
	Hose Rupture Valve on Boom	
	Hose Rupture Valve on Arm	
	X1 return filter	



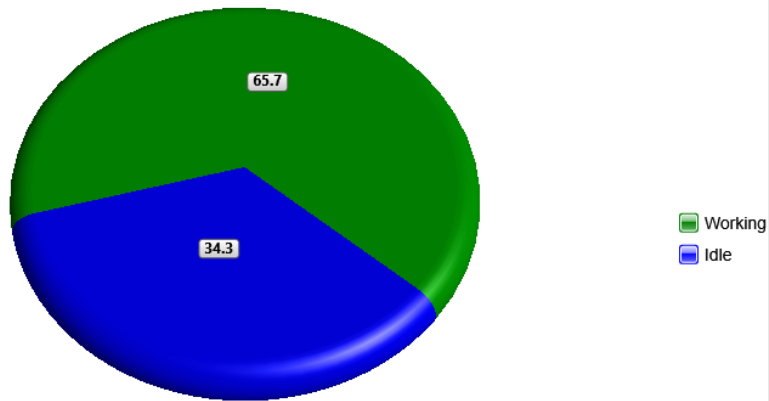
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Fuel consumption distribution on work mode



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Machine utilization (%)



Total logged time (h) = 4044.4

Definition:

The graph shows the distribution of the operating time for the machine. The operating time is defined as the time with engine on

Blue sector = Engine is running, but attachments and tracks are not moved or operated .

Green sector = Machine in work with the move of attachments and tracks



Machine model	SerialNo	Operating Hours	Reading Date
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**Regeneration ignored
Total number of ignored regenerations 0**

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0
*	0	2000	0	0	0	0	0



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Regeneration aborted
Total number of aborted regenerations 101

	Op hours	Year	Month	Day	Hour	Minute
*	3324	2015	5	22	9	1
*	3413	2015	6	8	16	16
*	3587	2015	8	7	16	18
*	3587	2015	8	7	16	38
*	3587	2015	8	7	17	5
*	3611	2015	8	12	16	28
*	3630	2015	8	19	11	5
*	3652	2015	8	28	13	28
*	3652	2015	8	28	13	18
*	3660	2015	8	31	15	16
*	3660	2015	8	31	15	28
*	3661	2015	8	31	15	36
*	3661	2015	9	1	7	16
*	3661	2015	9	1	7	23
*	3668	2015	9	1	15	48
*	3717	2015	9	10	17	14
*	3870	2015	10	28	14	34
*	3877	2015	10	29	16	7
*	3992	2015	12	4	11	56
*	3997	2015	12	6	9	56



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Regeneration duration
Total number of occurrences = 417

	Op hours	Year	Month	Day	Hour	Minute	Duration (min)
*	3908	2015	11	4	14	47	41
*	3917	2015	11	6	13	59	48
*	3927	2015	11	11	15	45	48
*	3934	2015	11	12	13	19	42
*	3943	2015	11	20	11	4	46
*	3949	2015	11	25	8	45	42
*	3958	2015	11	30	9	44	42
*	3966	2015	12	1	10	12	41
*	3975	2015	12	2	10	34	41
*	3982	2015	12	3	9	9	50
*	3991	2015	12	4	11	16	40
*	3997	2015	12	6	9	51	4
*	3997	2015	12	7	7	19	41
*	4006	2015	12	8	8	24	48
*	4014	2015	12	9	10	7	41
*	4021	2015	12	10	7	48	41
*	4028	2015	12	11	7	20	41
*	4032	2015	12	11	13	17	41
*	4036	2015	12	14	7	37	41
*	4043	2015	12	15	7	26	57



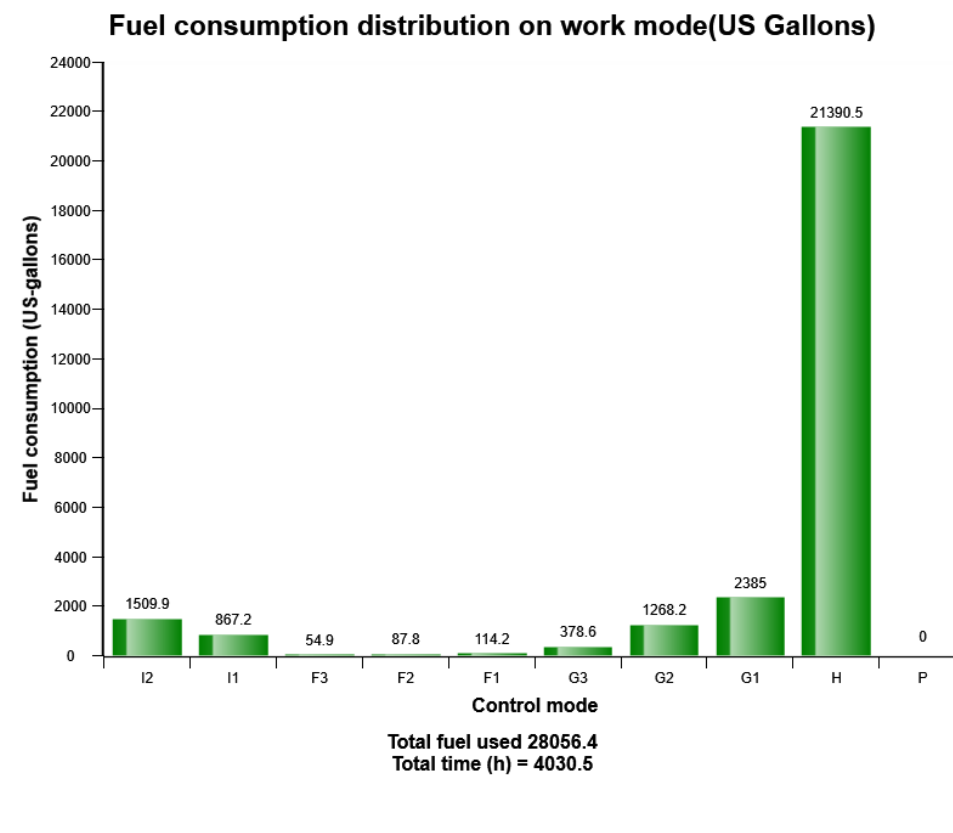
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Regeneration intervals
Total number of occurrences = 1942

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
* 4032	2015	12	11	12	41	37
* 4033	2015	12	11	13	58	128
* 4035	2015	12	14	7	8	29
* 4036	2015	12	14	8	17	64
* 4038	2015	12	14	10	6	113
* 4039	2015	12	14	12	48	205
* 4043	2015	12	15	6	53	9
* 4043	2015	12	15	7	15	11
* 4044	2015	12	15	8	23	161
* 4046	2015	12	15	11	40	16
* 4046	2015	12	15	12	42	14
* 4046	2015	12	15	13	2	46
* 4047	2015	12	15	13	56	11
* 4047	2015	12	16	6	54	79
* 4049	2015	12	16	11	17	3
* 4049	2015	12	16	9	43	8
* 4049	2016	1	6	11	44	30
* 4049	2015	12	17	12	50	5
* 4049	2015	12	16	8	36	9
* 4049	2015	12	17	13	5	8



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Definition:

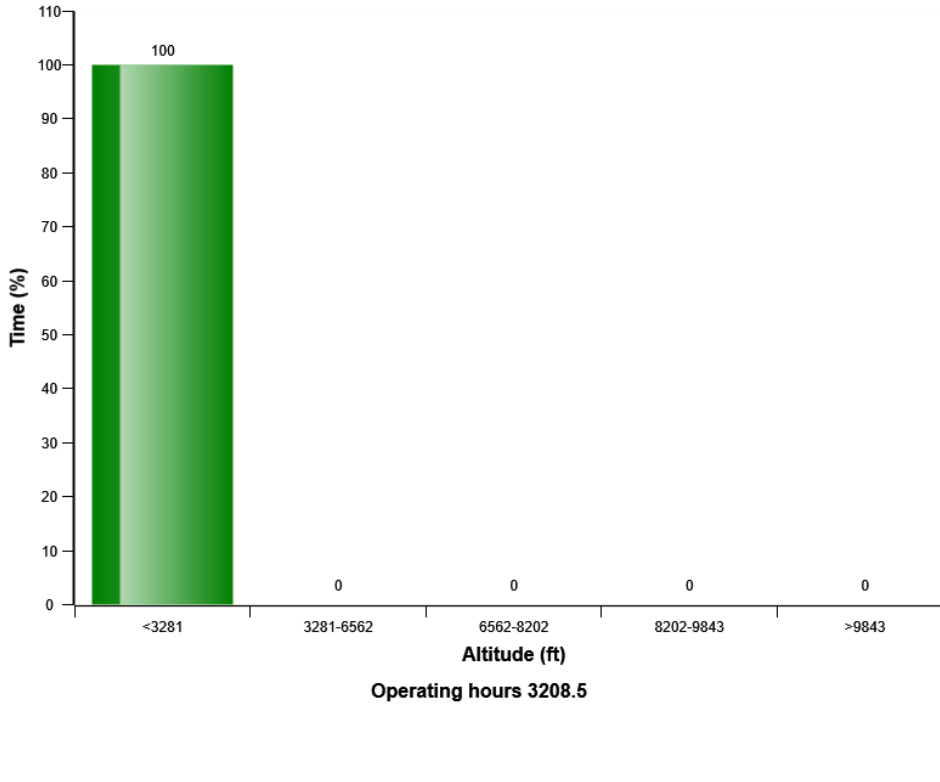
The diagram describes the amount of fuel consumed per engine speed mode distribution.

Total amount of fuel consumed (m3) in above means that the sum of the fuel while it consumed for engine ON. The values above distribution were calculated from theoretical calculation with logged data in V-ECU so it can be some different from actual performance in field.



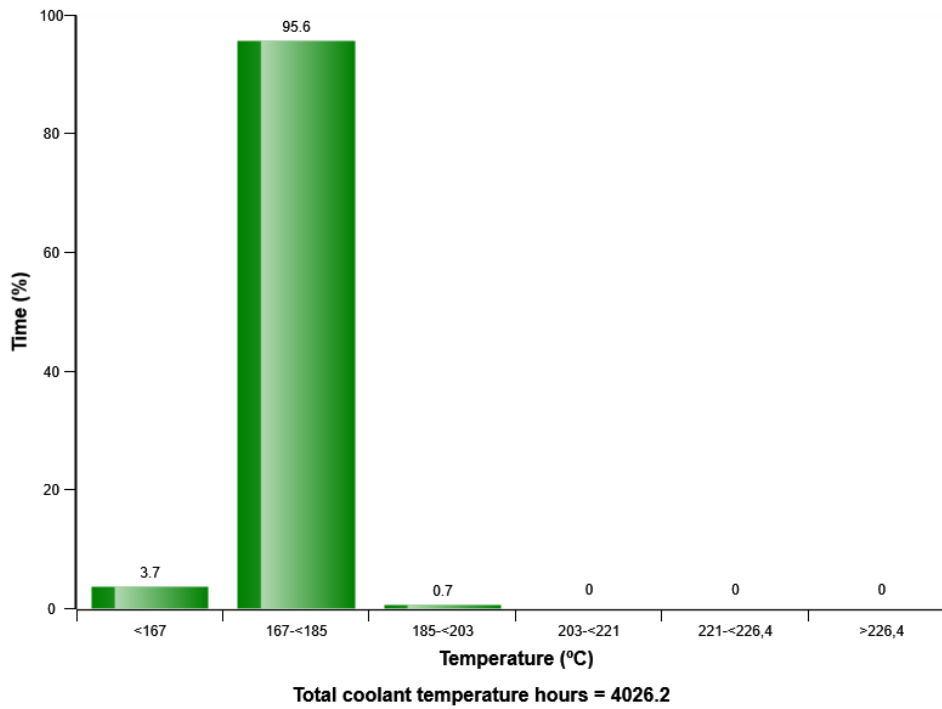
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Altitude distribution

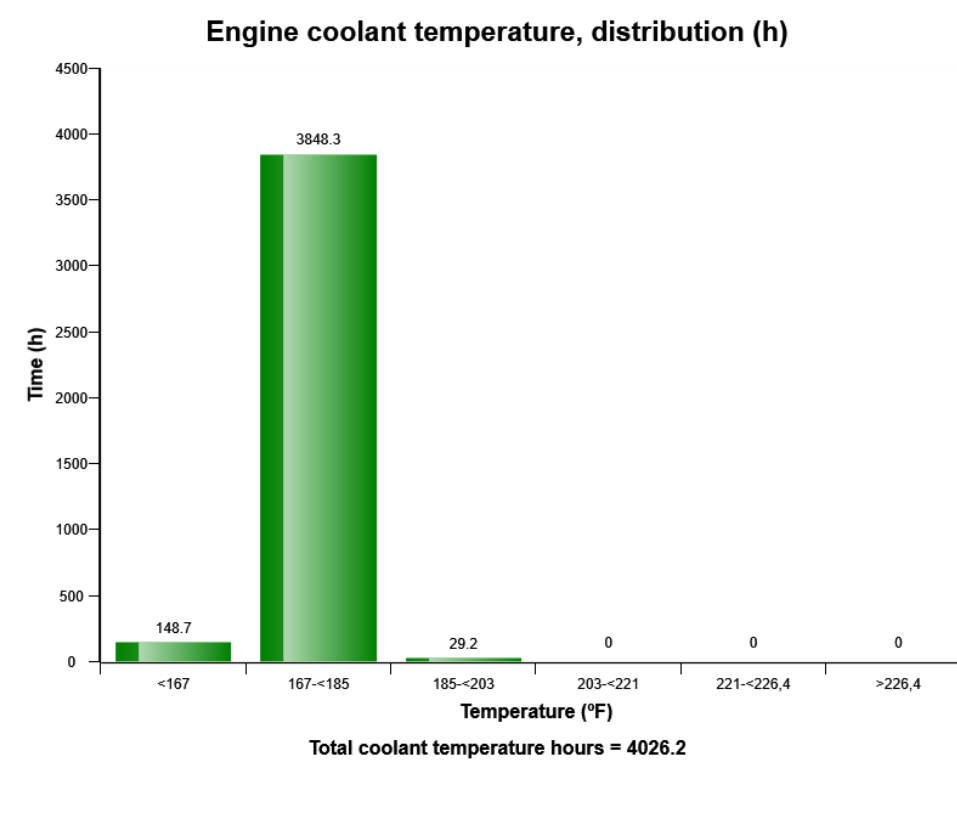


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Engine coolant temperature, distribution (%)



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Definition:

The graph shows the time distribution of the temperature, while engine running.

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this



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region.

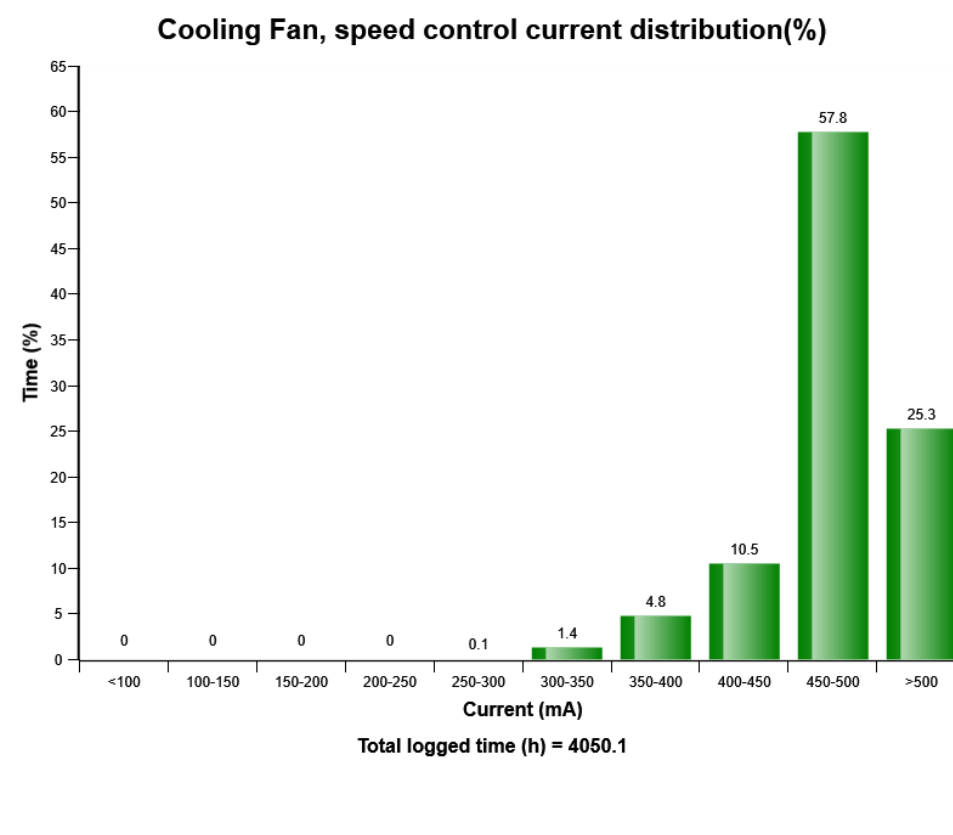
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



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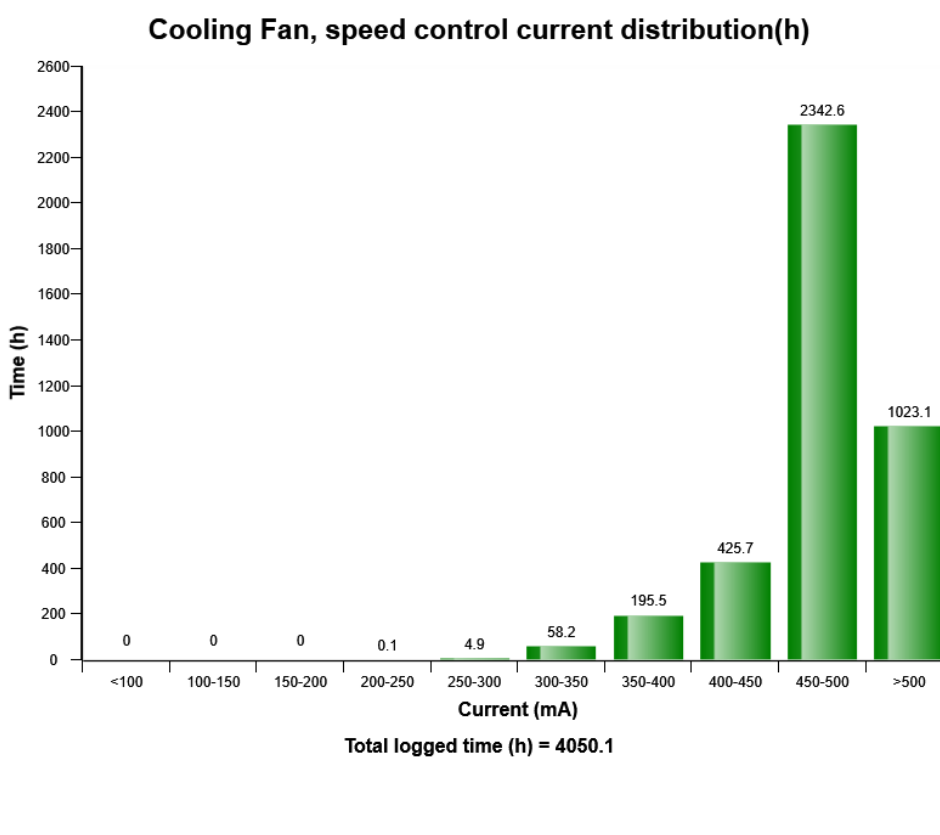
Definition:

The diagram describes Hydraulic Cooling fan speed control, Current (mA) distribution, on fan speed Control..

Total time (hours) in above means the sum of the time for Hydraulic Cooling fan operation.



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Definition:

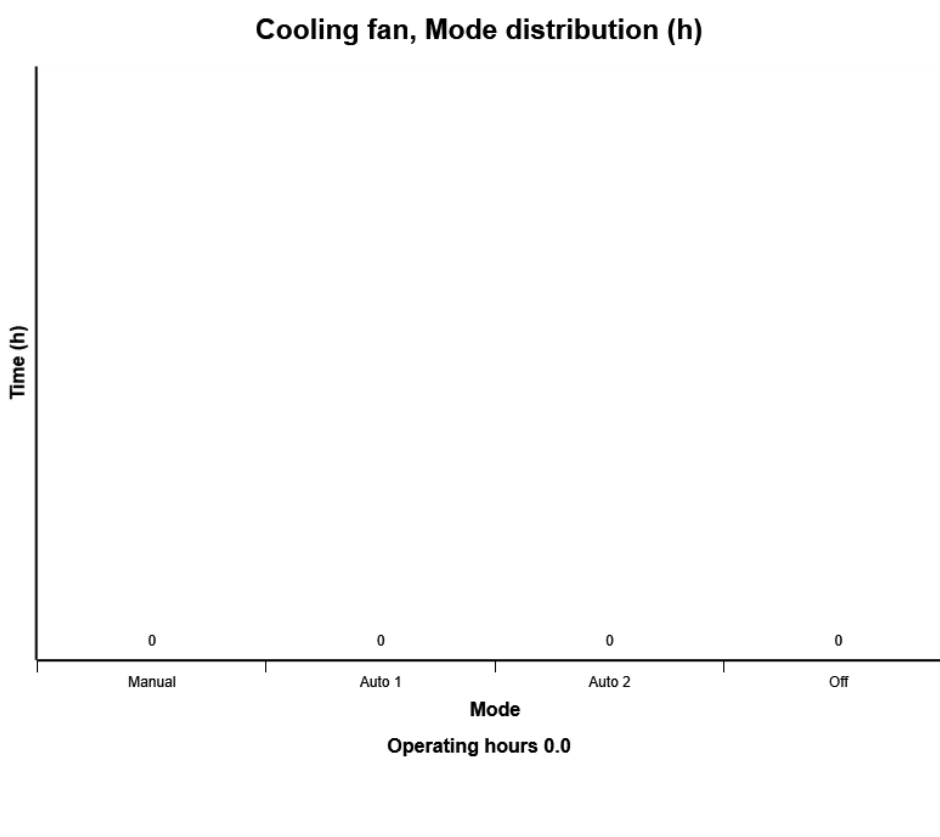
The diagram describes Hydraulic Cooling fan speed control, Current (mA) distribution, on fan speed Control..

Total time (hours) in above means the sum of the time for Hydraulic Cooling fan operation.



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Cooling fan, Mode distribution (h)



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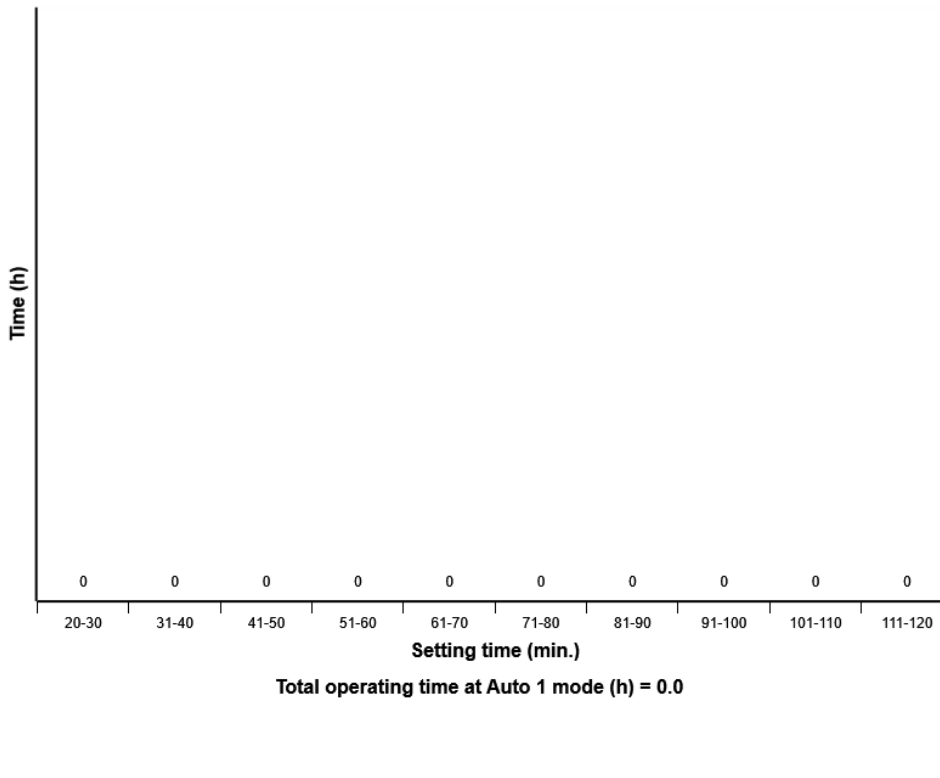
Cooling fan, Normal-Reverse rotation distribution (%)

Total operating time (h) = 4037.5



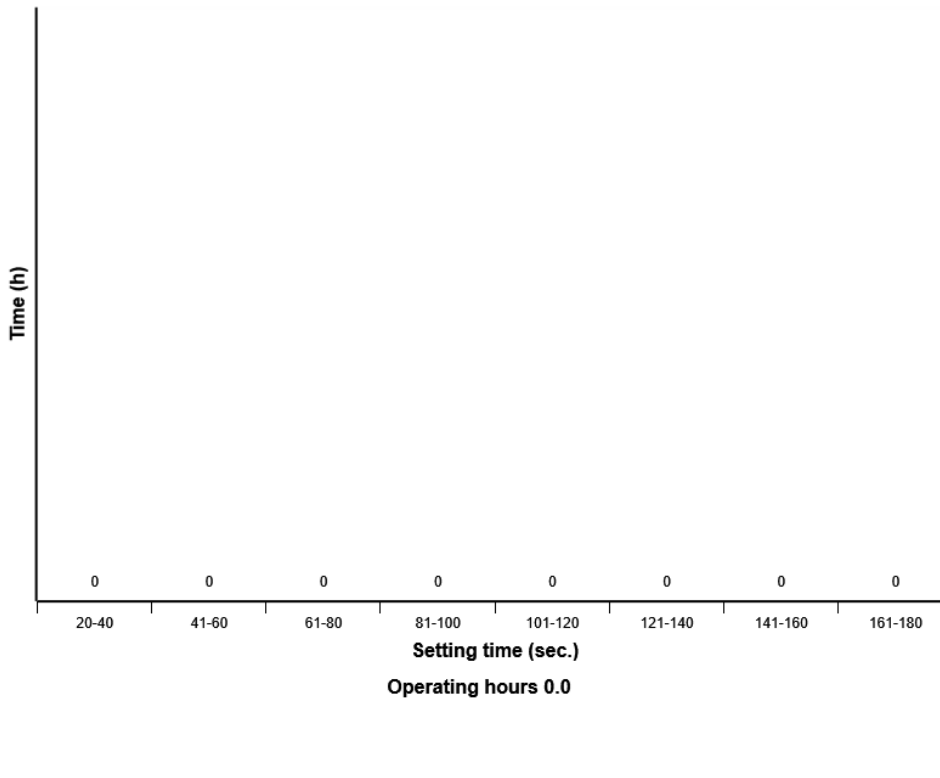
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Reverisble fan, Time setting distribution (h) at Auto 1 mode



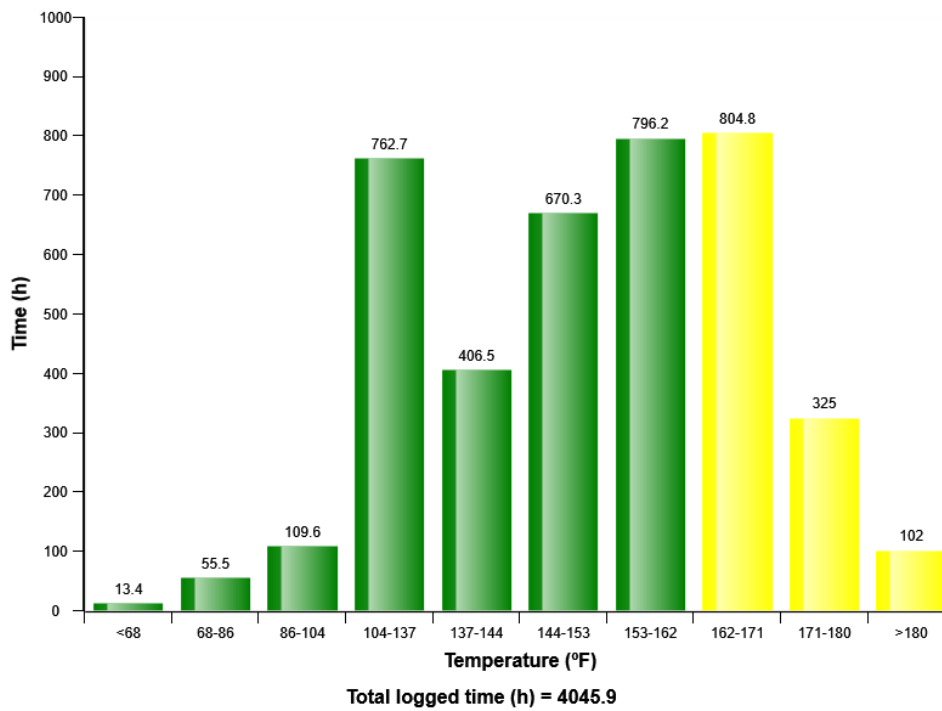
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Reversible fan, Time setting distribution (h) at Manual mode

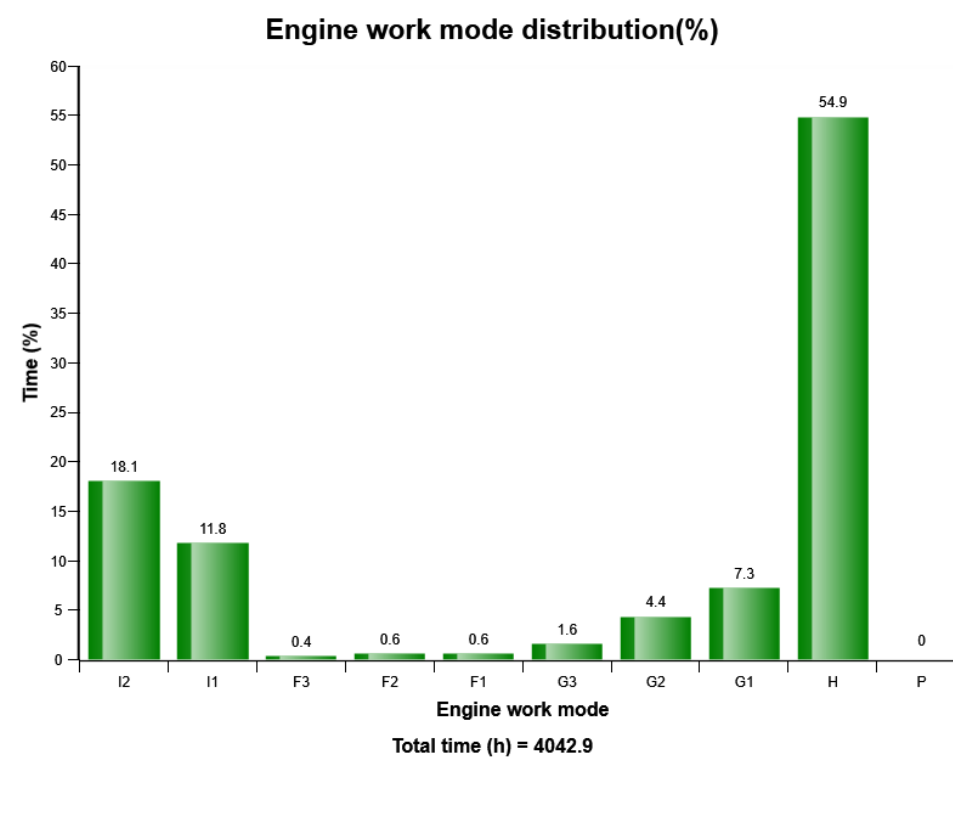


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Engine boost air temperature distribution (h)



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Definition:

This diagram shows the distribution of the engine work mode in time percent.

Distribution of each work mode is shown on top of the column in percentage.

Explanation:

Y-axis: The percentage of the operating hours on each work mode.

X-axis: The engine work mode (10 step in total)

Distribution of each work mode is shown on top of the column in percentage.

The sum of time distribution in percentage is 100

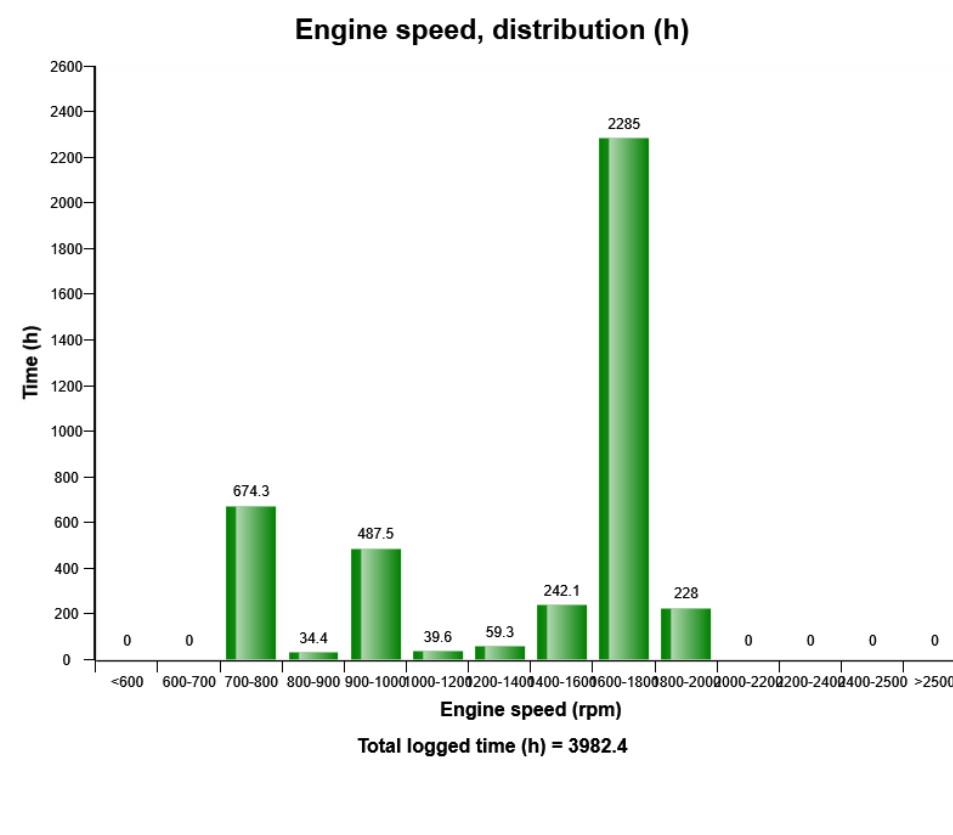


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Total time (h) is listed below the diagram



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Definition:

The graph describes the engine speed distribution, in hours.

The sum of all bars = total time of engine running.

Explanation:

Y-axis: Engine running time in hours.

X-axis: Engine speed in rpm.

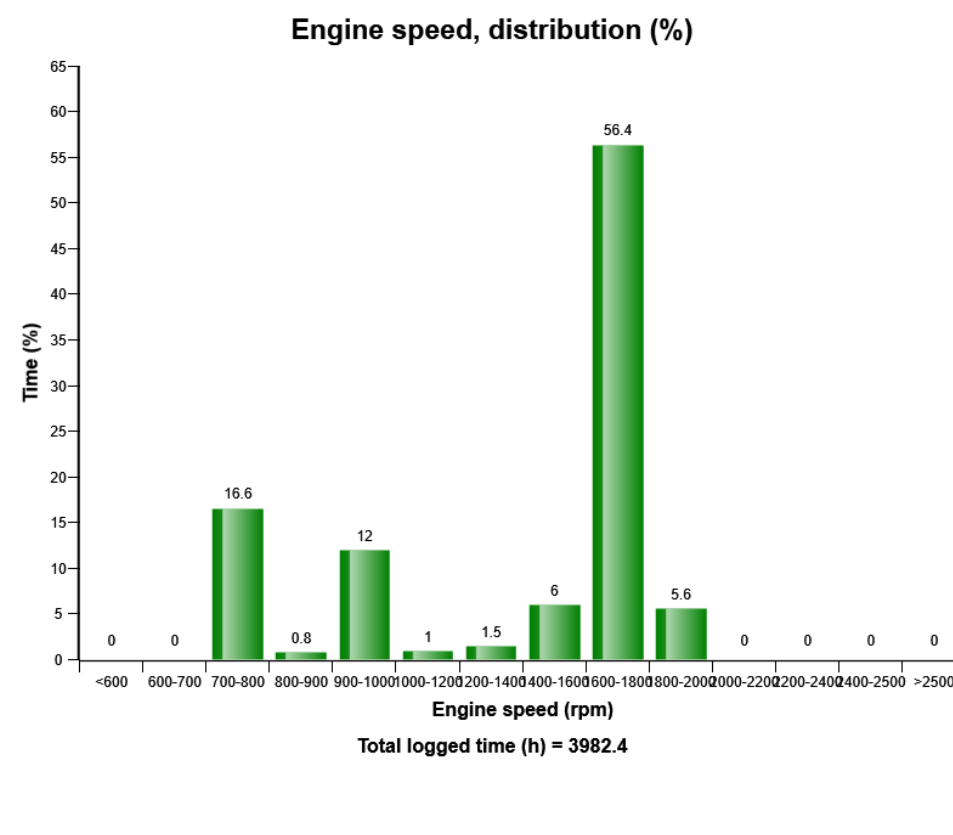
Green bars = Normal engine speed range.

Red bars =The engine speed has exceeded the maximum design speed.

Exceeding the maximum design speed may cause severe damage to the engine.



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Definition:

The graph describes the engine speed distribution in percent of time.

The sum of all bars=100% of engine running time.

Explanation:

Y-axis: Engine running time in percent.

X-axis: Engine speed in rpm.

Green bars = Normal engine speed range

Blue bar = Idling interval.

Red bars =The engine speed has exceeded the maximum design speed.



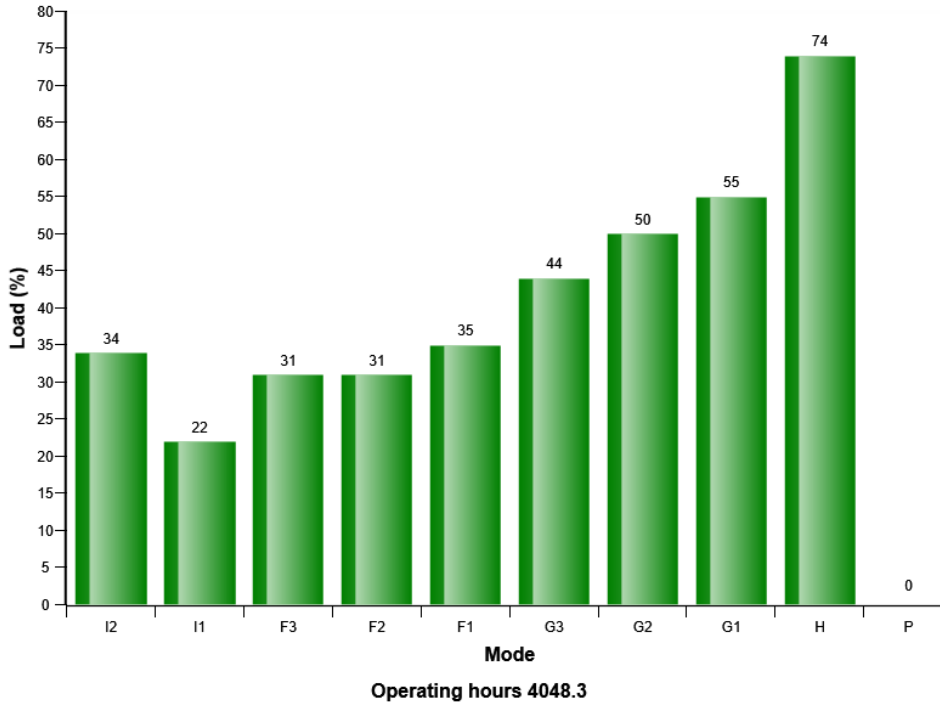
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Exceeding the maximum design speed may cause severe damage to the engine

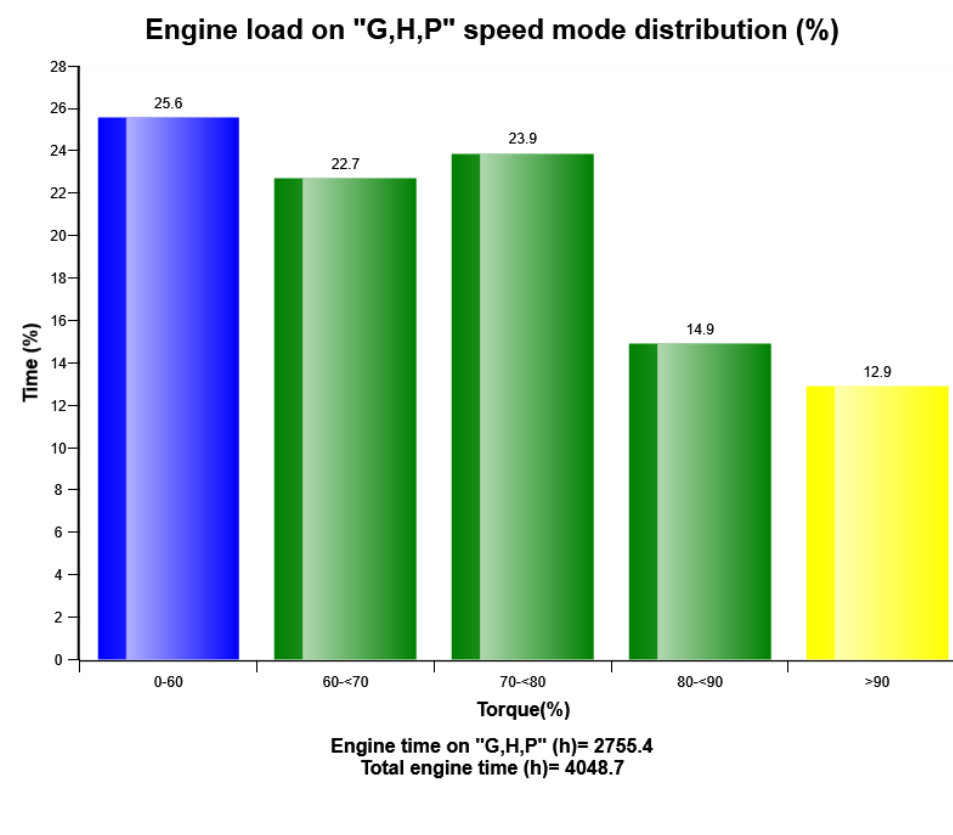


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Average engine load per mode distribution (%)



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This graph shows the distribution of the engine load.

Blue bar: Low load

Green bar: Normal load

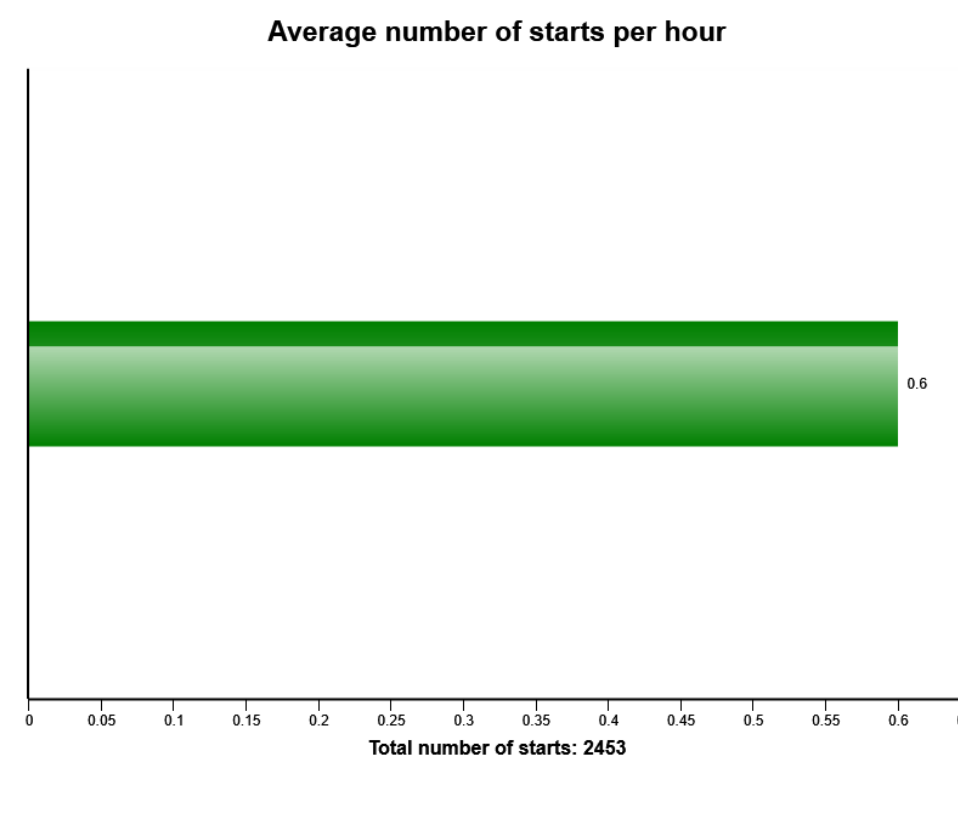
Yellow bar: Excessive load

Load distribution for each bar is shown on top of its column in percentage.

The sum of bars is 100%.



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Definition:

The graph describes the average number of engine starts per engine running hour.

Explanation:

X-axis: Number of average starts per hour.

The actual time used for calculation, is time with engine on

If the fuel consumption is high one reason may be that the engine is not turned off often enough, perhaps machine is left idling for long periods. Check " Machine utilization".

The value can vary a lot depending on in which application the machine is used.

To see at which different temperatures engine is started see" Start at different engine temperatures."

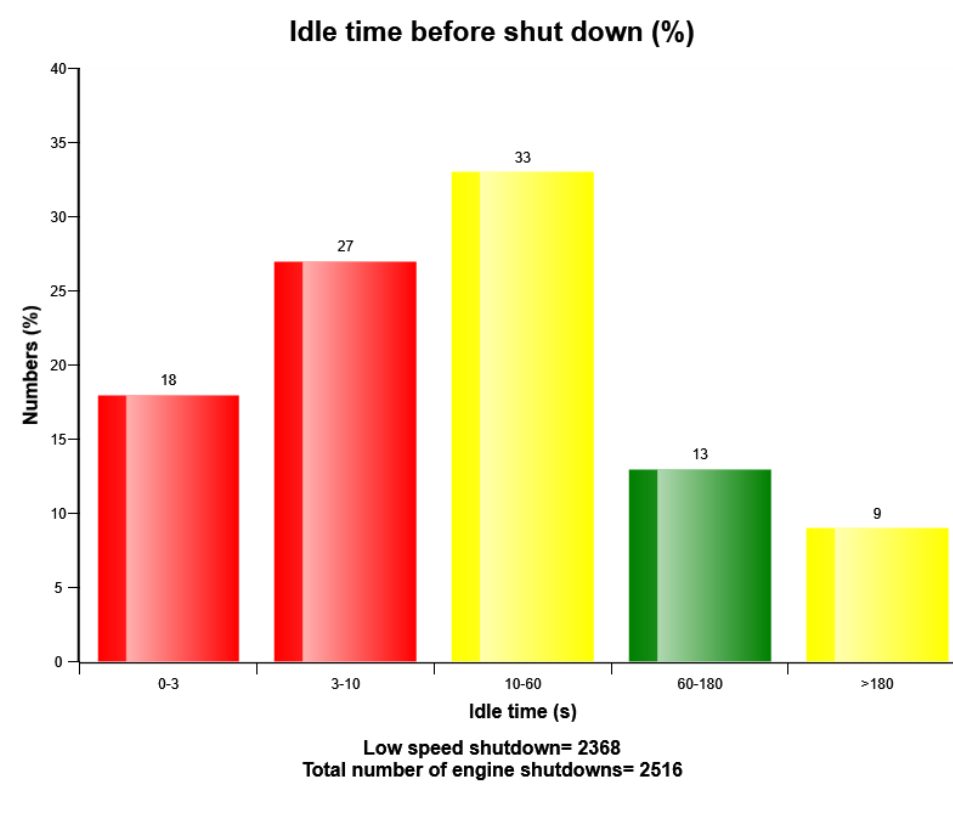


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Green bar = Number of average starts per hour



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Definition:

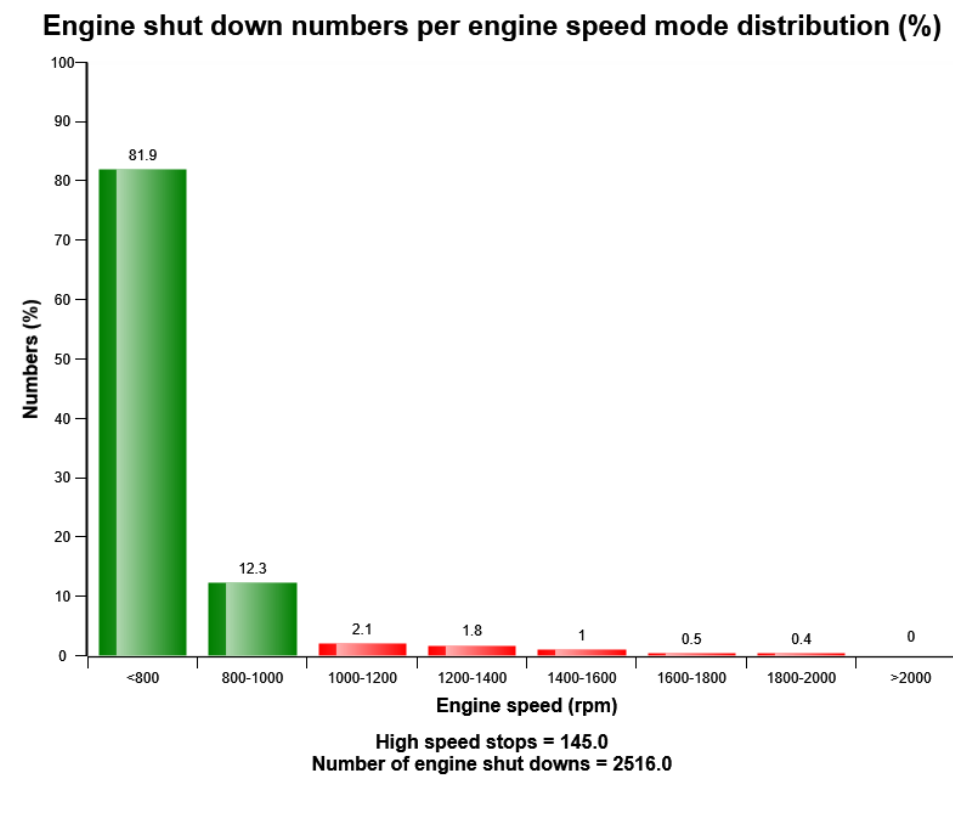
This graph shows the distribution of delayed time at low idle speed until the engine is turned off.

The delayed time distribution for each bar is shown on top of its column in percentage.

The sum of bars is 100%.



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Definition:

The diagram shows the number of stops at high idle (I1 ~ P mode).

Green bars = Normal engine stop

Red bars = Abnormal engine stop

Engine stops at a high idle can cause server damage to the turbo charger due to shortage of the oil lubrication. The engine should be stopped at low idle(I2 mode).

Explanation:

Y-axle: Number of engine stop at each work mode.

X-axle: Work mode.



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Distribution of each work mode is shown on top of its column in number.

Total number of shut down is listed below the diagram.



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High Charge air temperature
Total number of occurrences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

Criteria :

In order for an occurrence of high engine charge air temperature to be recorded and the count to increment by 1, the engine charge air temperature must change from "normal" to "high." The event of high engine charge air temperature will end when the status changes from "high" back to "normal."



Machine model	SerialNo	Operating Hours	Reading Date
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Low coolant level
Total number of occurrences = 6

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
* 0	2012	6	19	10	44	17
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 0	2015	12	11	6	44	153
* 0	2000	0	0	0	0	0
* 0	2000	0	0	0	0	0
* 3613	2015	8	13	9	14	17
* 3886	2015	10	31	9	6	32
* 3902	2015	11	4	6	54	33
* 3946	2015	11	20	14	9	16

Definition :

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Machine model	SerialNo	Operating Hours	Reading Date
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Only one event per minute is registered.

Over the table the total number of events is displayed

Criteria :

In order for an occurrence of low engine coolant level to be recorded in a data point, the count to increment by 1 the engine coolant level state must change from "normal" to "low."



Machine model	SerialNo	Operating Hours	Reading Date
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Low engine oil level at start
Total number of occurrences = 0

Op hours	Year	Month	Day	Hour	Minute
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0
* 0	2000	0	0	0	0

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Criteria :

In order for an occurrence of low engine oil level to be recorded in a data point and the count to increment by 1, an Alarm shall have been received at start up of machine



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Fuel Filter Clogging
Total number Fuel filter clogging = 47

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
* 2	2012	6	20	11	20	1
* 2	2012	6	20	12	40	4
* 3	2012	6	20	13	22	3
* 3	2012	6	20	13	52	1
* 1429	2013	10	25	16	21	2
* 1429	2013	11	1	0	34	0
* 1429	2013	11	1	0	36	1
* 1	2012	6	20	9	15	2
* 2	2012	6	20	9	32	0
* 2	2012	6	20	9	32	3
* 2	2012	6	20	9	52	1
* 2	2012	6	20	9	53	0
* 2	2012	6	20	10	0	0
* 2	2012	6	20	10	2	0
* 2	2012	6	20	10	11	0
* 2	2012	6	20	10	12	1
* 2	2012	6	20	10	21	0
* 2	2012	6	20	10	50	3
* 2	2012	6	20	11	0	9
* 2	2012	6	20	11	16	1



Machine model EC340D	SerialNo 210253	Operating Hours 4050.1	Reading Date 1/6/2016
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Low Air filter pressure
Total number of occurrences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0
0	2000	0	0	0	0	0

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month, day, hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed.

Duration :

The duration of each event is shown after the timestamp of the event.

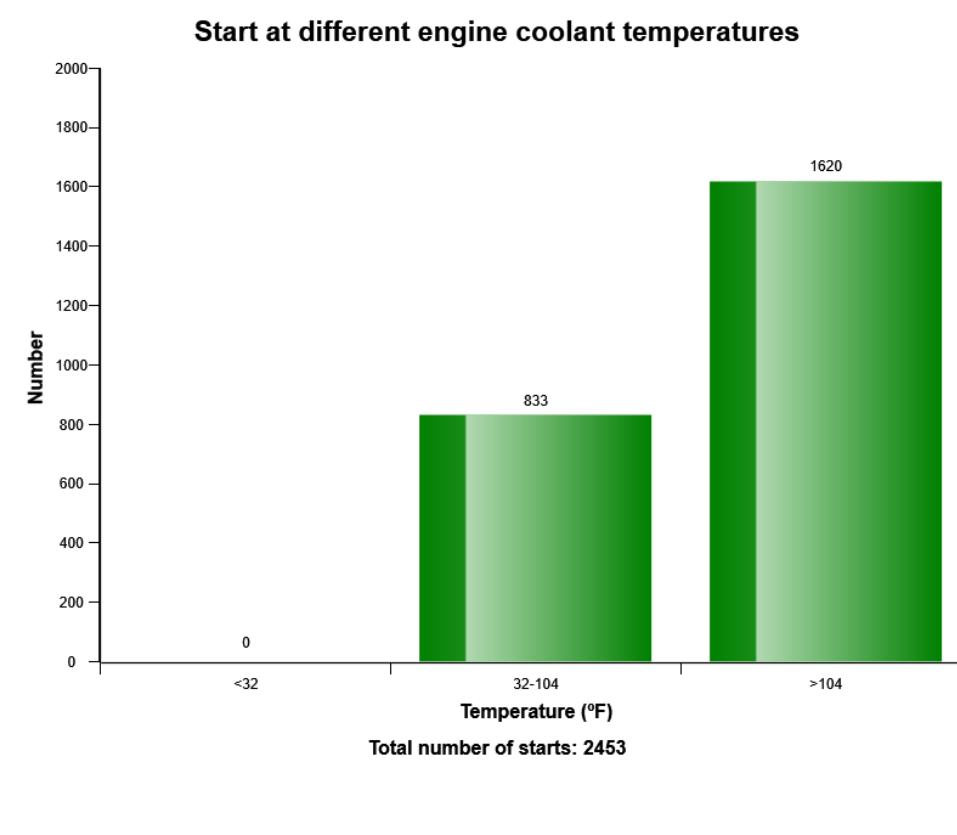
The duration is counted as long as the criteria is fulfilled.

Criteria :

The criteria to get an registration, is that the alarm signal for air filter clogged is active, and that the diesel engine is running.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The graph shows the distribution of engine coolant temperature, at the starting moment.

Explanation:

Y-axis: Number of engine starts

X-axis: Engine coolant temperature.

A great proportion of engine wear is due to cold starts. Try to avoid extremely cold starts. Try using an electric coolant heater.

Under the graph the total number of engine starts is displayed.

Also see " *Number of starts / hour*" to get a complete picture of engine starting.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

Low Engine Oil Pressure
Total number of occurrences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (psi)
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0
0	2000	0	0	0	0	0	0

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating hours is displayed in the first column, followed by year, month, day, hour



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

Criteria :

In order for an occurrence of low engine oil pressure to be recorded in a data point and the count to increment by 1, the engine oil pressure state must change from "normal" or "error" to "low." The event of low transmission oil pressure will end when the status changes from "low" back to "normal" or "error."



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

High engine coolant temperature
Total number of occurrences = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month, day, hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed.

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

Criteria :

The criteria to get an registration, is that the alarm signal for high engine coolant temperature is active and that the diesel engine is running.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

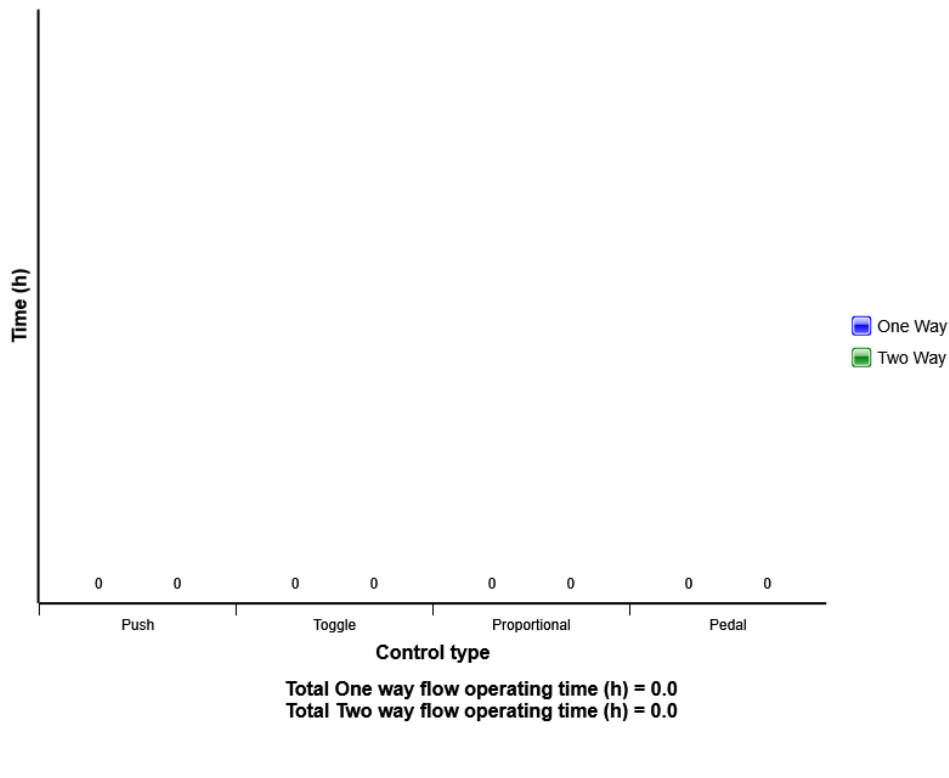
**Water level warning in water separator
Total number of occurrences = 52**

Op hours	Year	Month	Day	Hour	Minute	Duration (min)
1244	2013	9	10	15	29	0
1244	2013	9	10	15	20	0
1244	2013	9	10	15	20	0
1244	2013	9	10	15	18	1
1244	2013	9	10	15	15	0
1339	2013	10	8	11	20	2
1339	2013	10	8	11	9	0
1339	2013	10	8	11	11	1
1355	2013	10	14	8	28	2
1356	2013	10	14	10	0	1
1356	2013	10	14	9	37	0
1356	2013	10	14	9	22	0
1357	2013	10	14	10	58	1
1357	2013	10	14	10	52	2
1357	2013	10	14	10	15	0
1358	2013	10	14	11	19	2
1358	2013	10	14	13	21	4
1358	2013	10	14	11	33	0
1358	2013	10	14	11	40	2
1361	2013	10	14	15	41	0



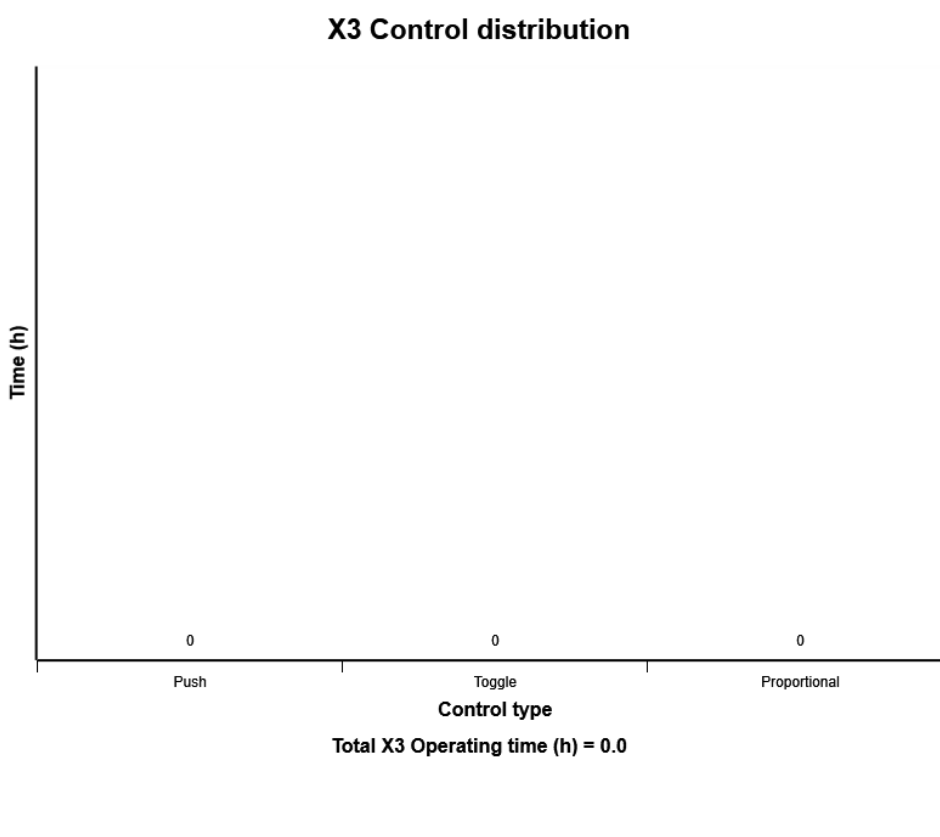
Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

X1 control distribution



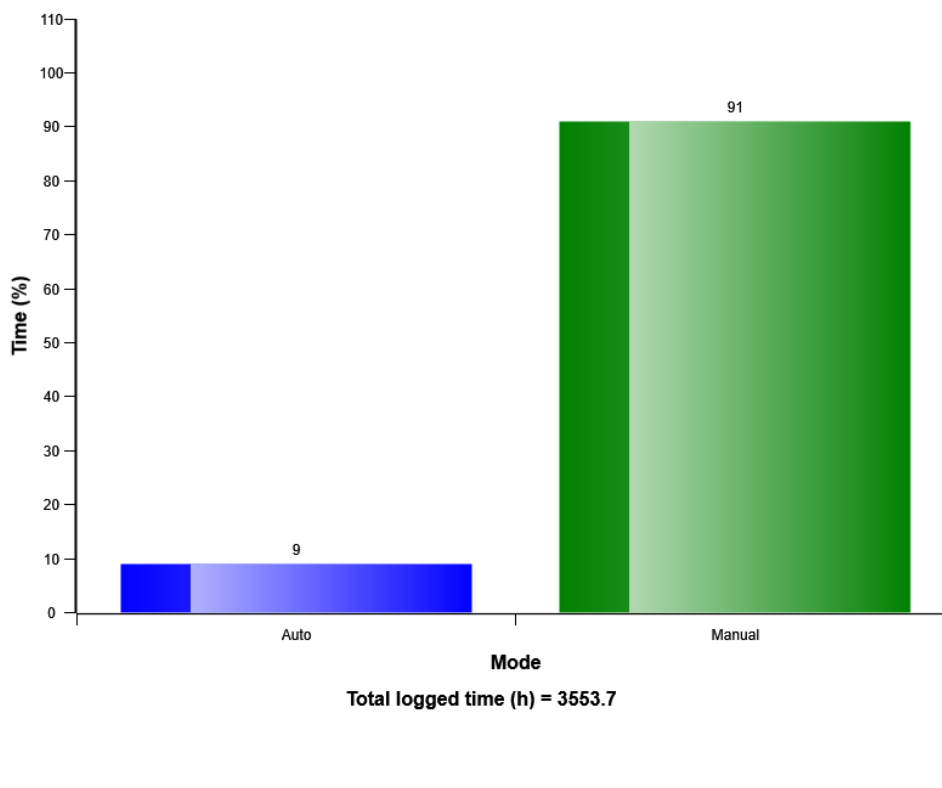
Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

X3 Control distribution



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

HVAC Auto - Manual mode selection distribution (%)



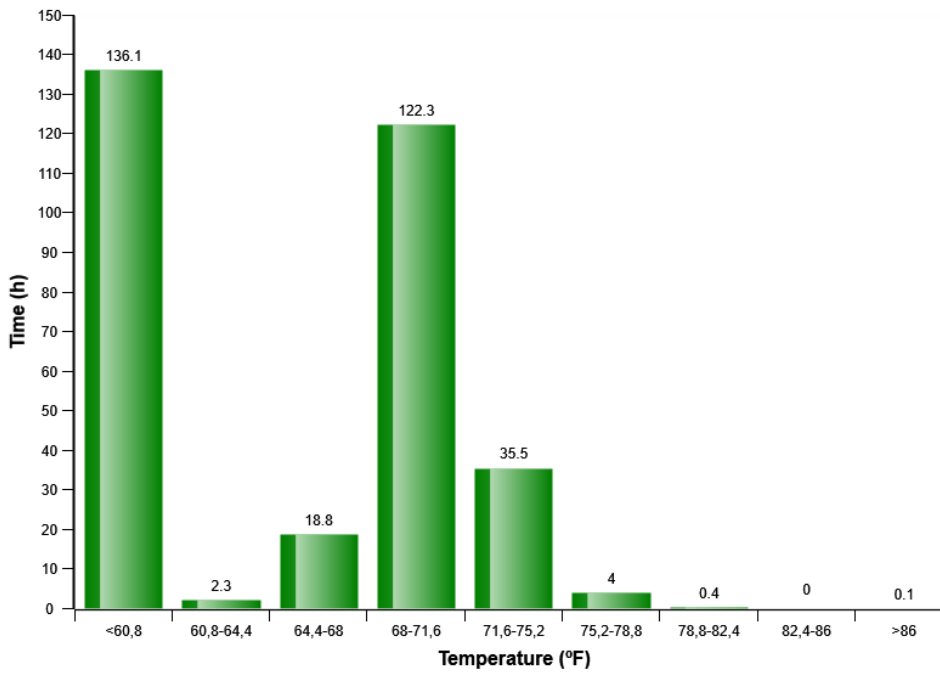
Definition:

The diagram describes auto-manual mode selection distribution of HVAC system in machine while it Works. The share of each mode compared to Total time of HVAC operation is displayed.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

HVAC air temperature setting in auto control mode distribution (h)



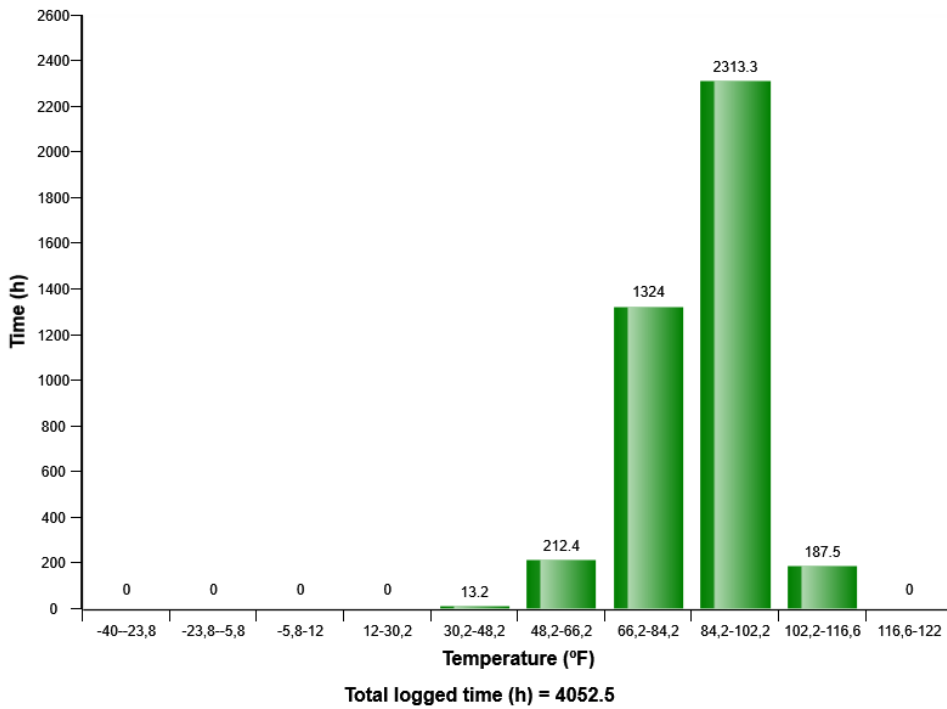
Definition:

The diagram describes air temperature setting distribution for HVAC auto control mode established by operator in Cabin

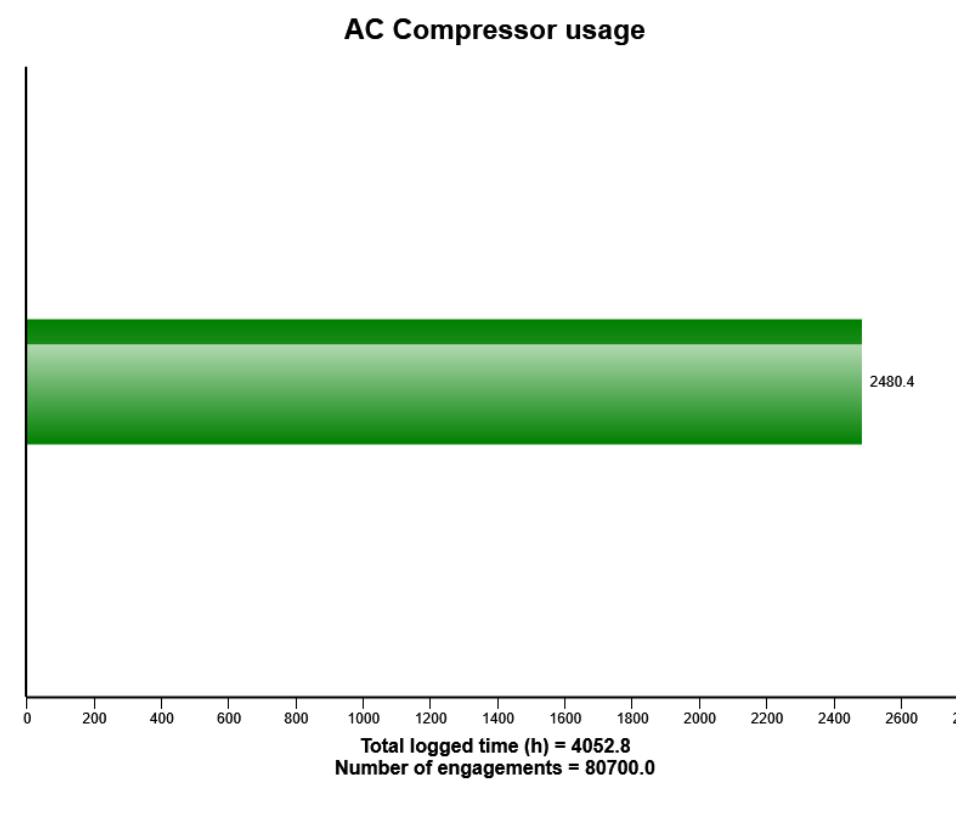


Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

Machine ambient temperature distribution (h)



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The graph shows the total time of AC compressor engagement.

Explanation:

Green bar: Total time in hours, AC compressor has been engaged.

Under the graph the total engine running time (in hours) is displayed.

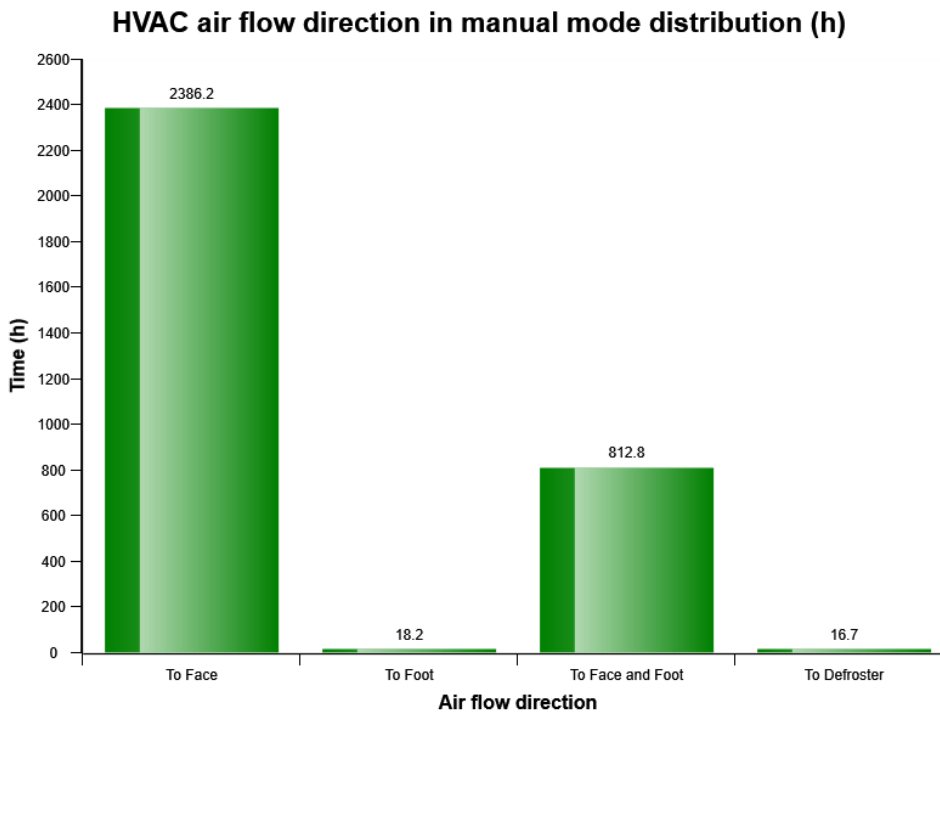
Total number of AC compressor activations is also displayed.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

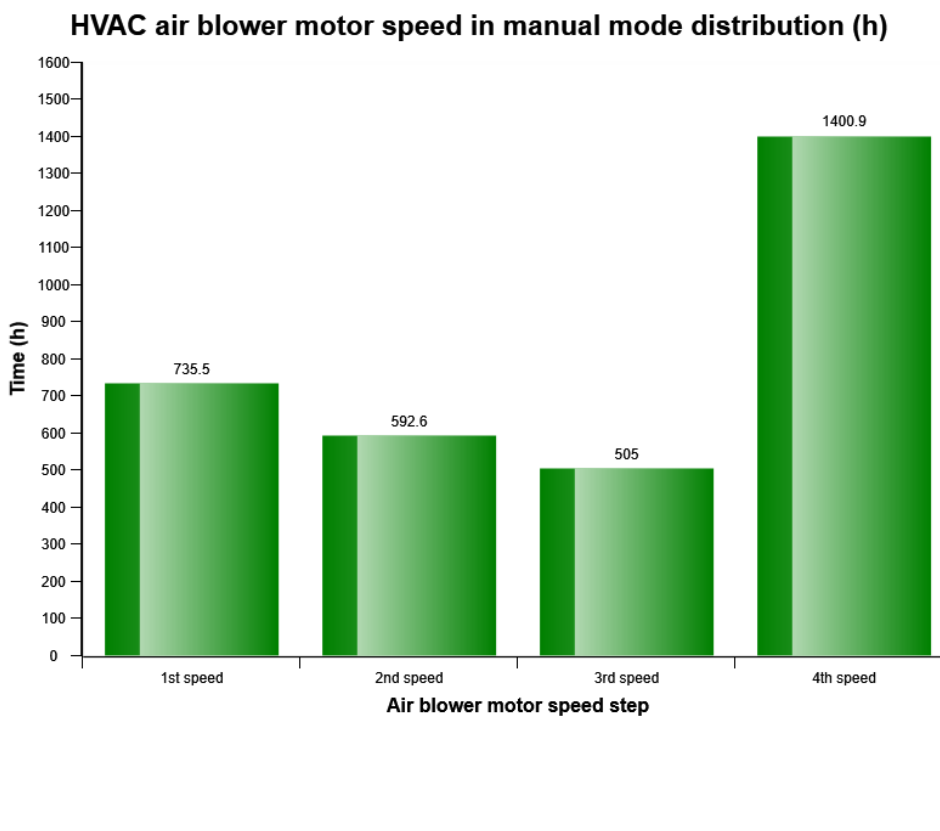


Definition:

The diagram describes air flow direction distribution for HVAC manual control mode established by operator in Cabin.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The diagram describes air blower motor speed distribution for HVAC manual control mode established by operator in Cabin.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

AC High Pressure
Total number of occurrences = 0

0	Year	Month	Day	Hours	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

Criteria :

Logging is performed when, High AC Pressure signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

AC Boiling Protection
Number of engagements = 0

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

Criteria :

Logging is performed when, Boiling protection signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

AC System Cut Out Pressure
Total number of occurrences = 10

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
3330	2015	5	26	7	2	4	73
3331	2015	5	26	9	1	1	90
3334	2015	5	26	12	47	1	91
3338	2015	5	27	7	14	1	72
3343	2015	5	28	7	14	1	72
3347	2015	5	28	12	52	1	90
3352	2015	5	29	7	46	3	72
3352	2015	5	29	7	21	1	70
3352	2015	5	29	8	45	1	82
3355	2015	5	29	12	31	1	86

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

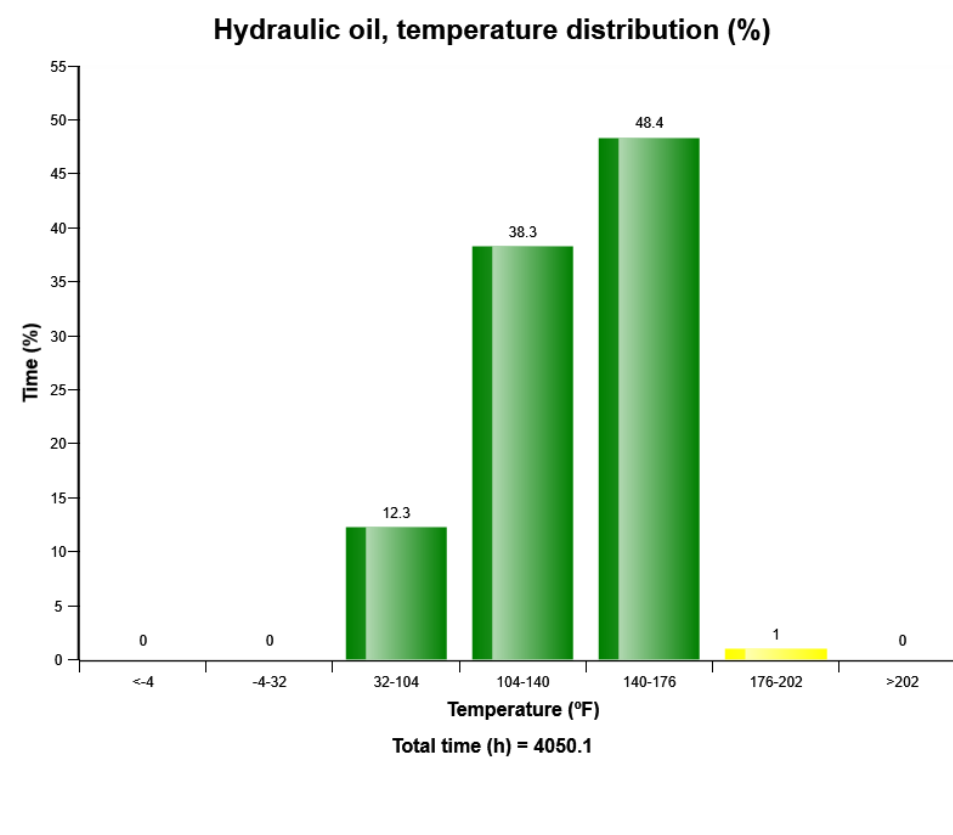
The extreme value column displays the most extreme value during the event.

Criteria :

Logging is performed when, AC cut out pressure signal is active. Ambient temp is viewed.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The graph shows the time distribution of the temperature, while engine running.

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

region.

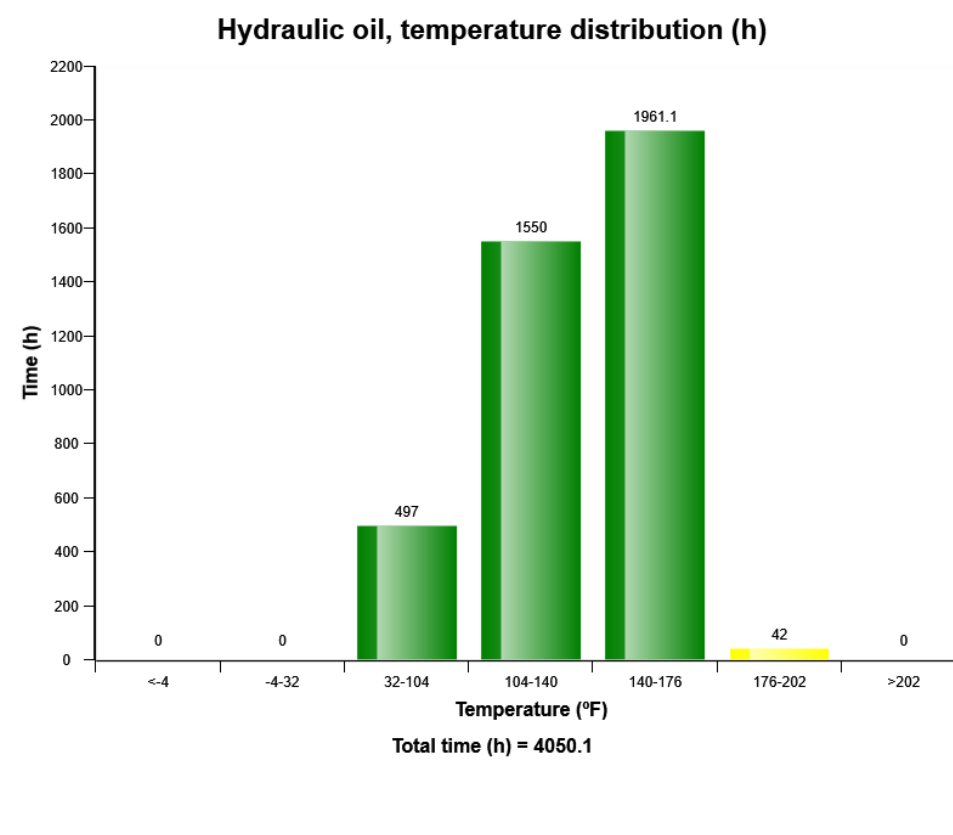
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The graph shows the time distribution of the temperature, while engine running.

Explanation:

Y-axis: Time

X-axis: Temperature distribution in classes.

Blue bar = Warm-up phase.

During the engine warm-up phase, this temperature region is passed.

It is normal to have registrations in this region.

Green bar = Normal working temperature. The Major part of the registrations shall be in this



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

region.

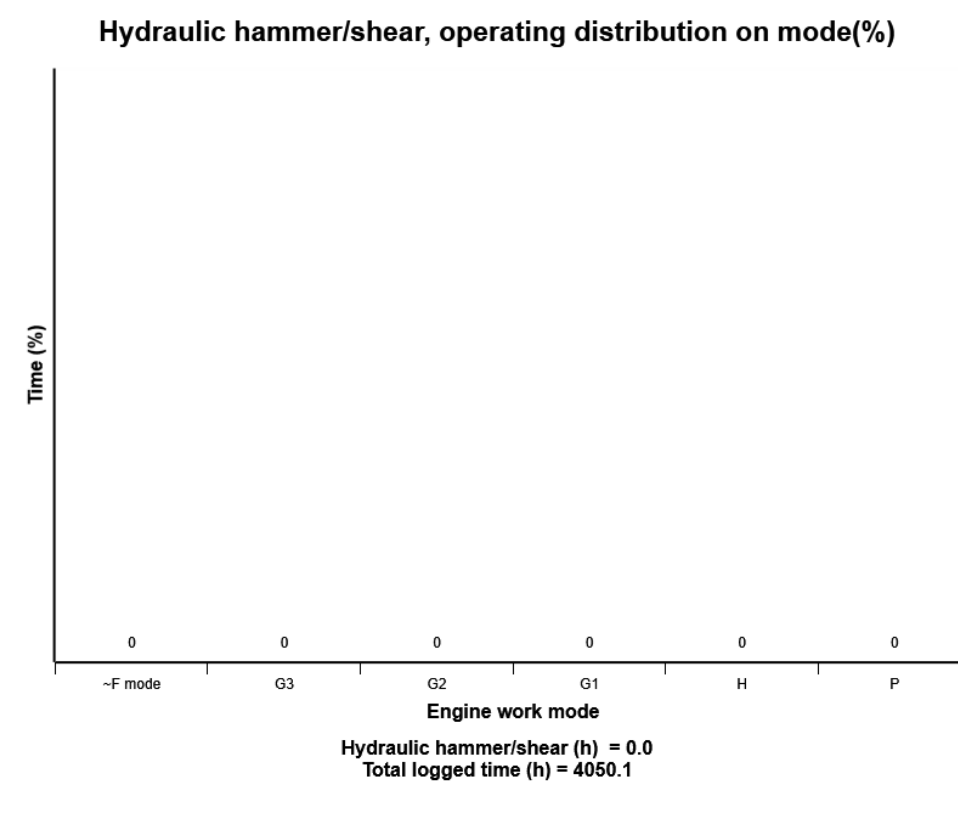
Yellow bar = High working temperature. It is normal to have some registrations in this region.

Red bar = Alarm.

Registrations in this region is not normal, running in this region may cause severe damage.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

The graph describes the operating hours (%) for hydraulic hammer/shears on each engine control mode .

Recommended to use green column mode of the hammer operation.

I2 = Idle 2

I1 = Idle 1

F3= Fine control 3

F2= Fine control 2

F1= Fine control 1



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

G3 = General 3

G2 = General 2

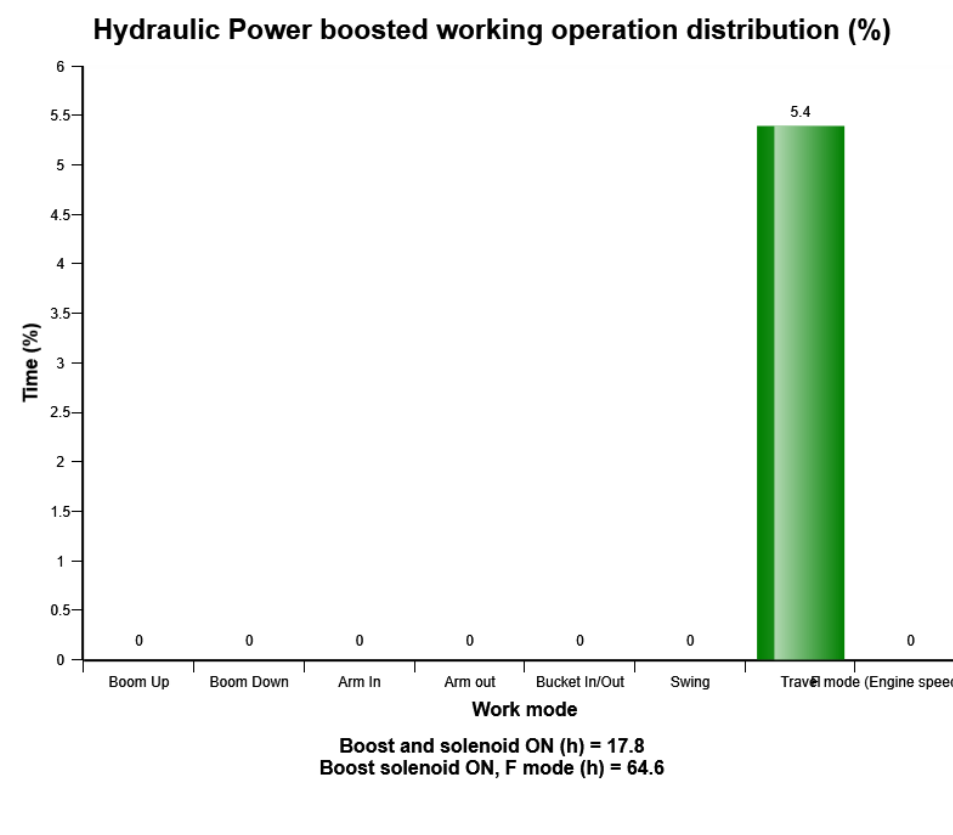
G1 = General 1

H = Heavy Duty

P = Power max



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016



Definition:

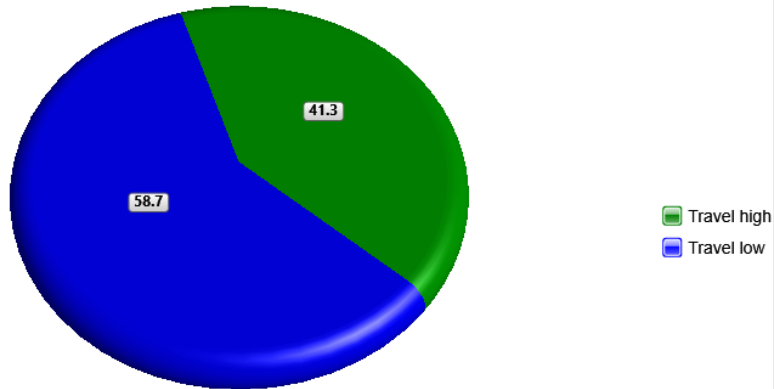
The diagram describes Power boosted operating time distribution, when main relief pressure increases on working operation modes. In this diagram, the sum of time (%) of each working operation mode can exceed 100%. It means that customer has been operated several working operations at the same time.

Total operating time with power boosted (hours) in above means sum of the time for Hydraulic Power boosted operation. The base for the percentage calculation is Total operating time with power boost. Time(%) on each working operation mode except travel and F mode above is the time, after the operator press power boost button on the joystick and until main relief pressure is recovered to default pressure.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

Travel speed, high/low (%)



Total travel time (h) = 361.6
Travel time / Operating hours (%)= 8.9

Definition:

This graph shows operating hour distributions on each travel speed for total travel time.

Blue sector: Travel switch in low position

Green sector: Travel switch in high position

Explanation:

Distribution of each travel time is shown on right of its sector in percentage

The sum of travel time in percentage is 100

Total travel time is listed below the diagram



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

**High hydraulic oil temperature
Total number of occurrences = 0**

Op hours	Year	Month	Day	Hour	Minute	Duration (sec)	Extreme (° F)
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32
0	2000	0	0	0	0	0	32

Definition :

This type of table shows the latest occasions when a specific event has occurred. When a specified criteria is fulfilled a registration is made. Each table row corresponds to one occasion. Operating



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

hours is displayed in the first column, followed by year, month , day , hour and minute to show when an event has occurred.

The rows are not ordered chronological (The latest event may be in the middle).

Only one event per minute is registered.

Over the table the total number of events is displayed

Duration :

The duration of each event is shown after the timestamp of the event.

The duration is counted as long as the criteria is fulfilled.

Extreme value :

The extreme value column displays the most extreme value during the event.

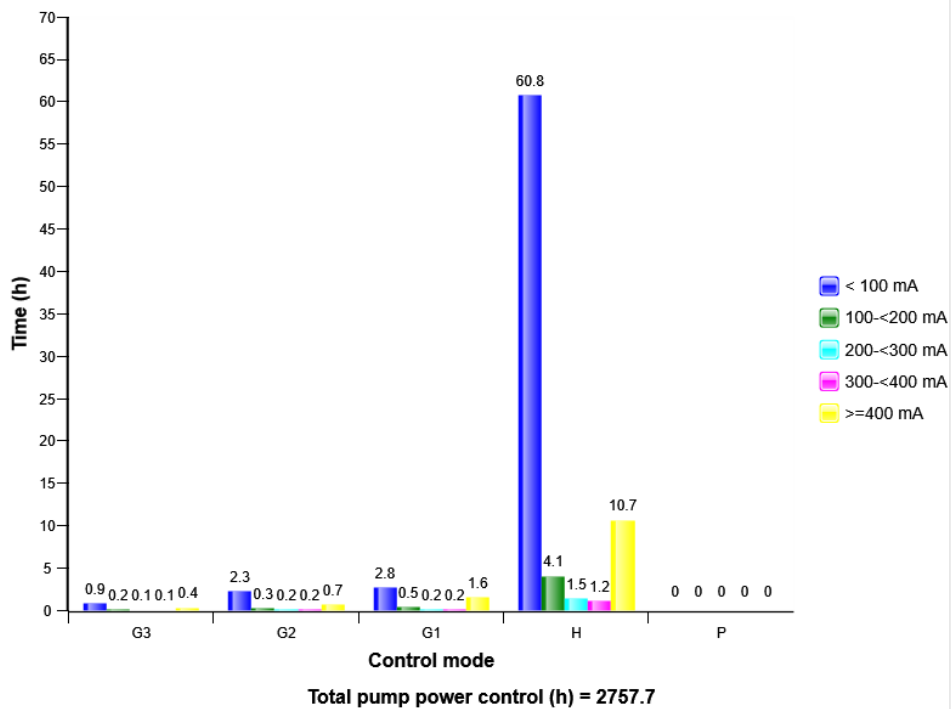
Criteria :

Logging is performed when, Alarm high hydraulic oil temperature , is active.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

Pump power control on Engine speed mode distribution (h)



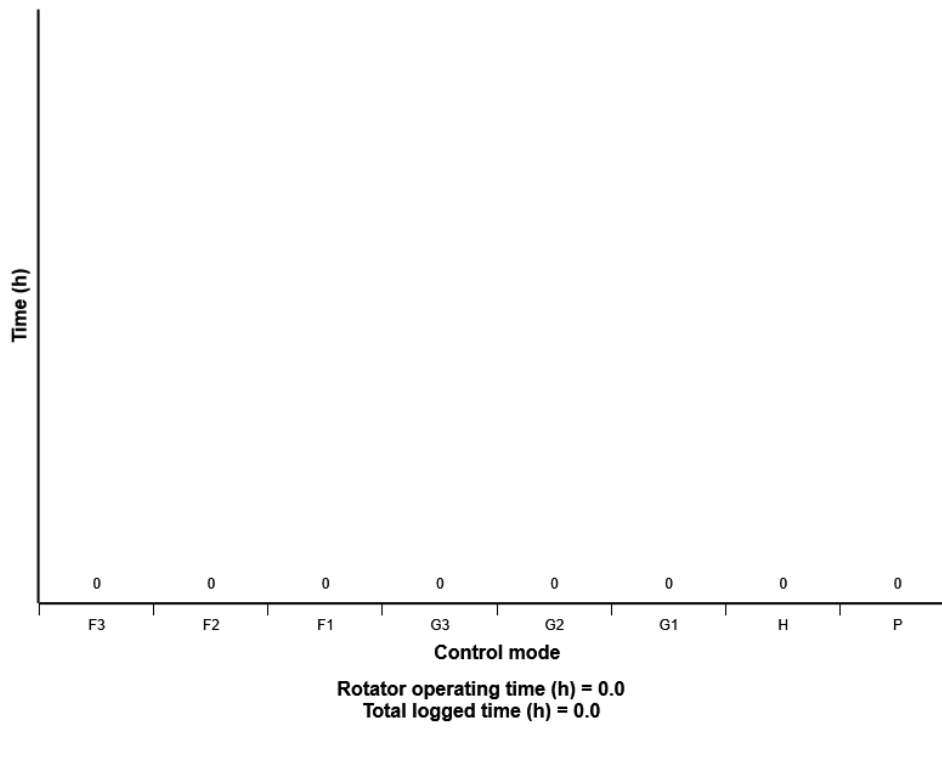
Definition:

The diagram describes the distribution of pump power control current operation on each engine mode



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

Rotator operation on engine speed mode distribution (h)



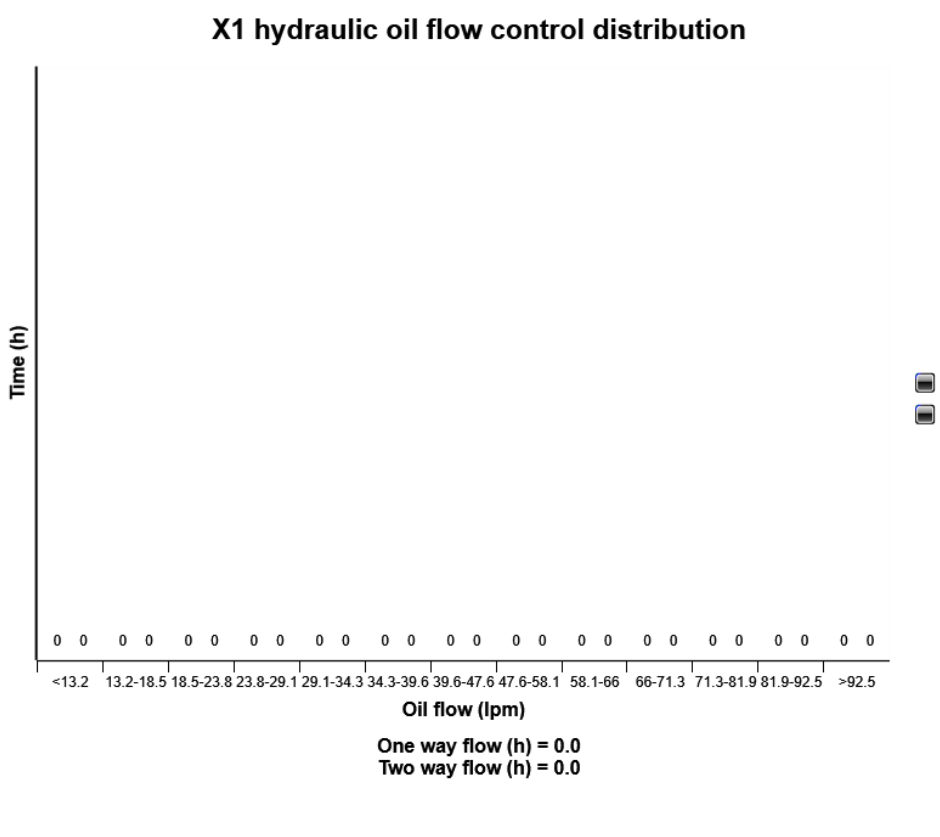
Definition:

The diagram describes the distribution of Rotator operating hours on mode.



Machine model	SerialNo	Operating Hours	Reading Date
EC340D	210253	4050.1	1/6/2016

X1 hydraulic oil flow control distribution



Definition:

The diagram describes X1 hydraulic oil flow control distribution of the machine while machine operates.

